



ROAD PAVEMENTS  
FORUM



# PIARC – SANRAL International Seminar Road Disaster Management

Marshall Muthen



# PIARC – SANRAL International Seminar

## The impact of extreme weather events on road transport systems and infrastructure



- PIARC Technical Committee 1.5 - Disaster Management
  - TC mandated to address topics related to improving the way road agencies manage during natural disasters.
- TC Focus: Disaster management against “Extreme Weather”
  - Coping with extreme weather
  - Social resilience within communities and public authorities for extreme weather
  - Infrastructure resilience for supporting supply chain during extreme weather events
- Seminar Objectives
  - Share expertise
  - Present relevant case studies,
  - Present effective solutions on preparedness, mitigation, response and recovery to extreme weather impacts.

# Attendance – 204 delegates



- 2-day seminar (October 16-17)
  - Seminar Day 1 & 2 – Open to public registrations
  - + day 3 – reserved for PIARC Technical Committee
  - R1250/day registration fee
  - 2 ECSA CPD points
- Venue
  - Originally planned for CTICC
  - Zimbali, Ballito selected – severe impacts of recent climatic events on KZN Coastal areas



# Recent Extreme Climatic events in KZN-NC



# Attendance – 205 Delegates

SANRAL	80
eThekwini Metro Municipality	34
International - PIARC TC	12
Africa Regional	6
National Dept. of Transport	3
Western Cape Provincial Gov.	3
KZN Provincial Gov.	2
Eastern Cape Provincial Gov.	3
Free State Provincial Gov.	1
Other	64

# Delegates



# Day 1



DAY 1	TITLE	SPEAKER (OR CHAIR)	ON-SITE/ON-LINE	14:15-15:45	SESSION 3 - CASE STUDIES FROM HIC AND LMIC	MODERATOR: [SANRAL] REABETSWE SEKGOTHUDI (RSA)
8:30-9:00	Registration			2min	Introduction by Session Chair	
<b>9:00-9:45</b>	<b>OPENING SESSION</b>	<b>MASTER OF CEREMONY</b>		15min	Lessons from the April 2022 KZN Floods	[Tooley Solutions] Geoff Tooley (RSA)
10min	Welcoming Word from Host Country	Reginald Demana, First Delegate of PIARC, CEO SANRAL	On-site	15min	Disaster Management Manual in PIARC	[PIARC TC1.5] Yoshinori Obata (JPN)
10min	Institutional Presentation of PIARC	[PIARC Former President] Nazir Ali	On-site	15min	Not Just Rain and Wind: What Extreme Weather Teaches Us About Transportation Security	[PIARC TC1.5] Jason Carnes (USA)
10min	Introduction from PIARC Technical Committee 1.5	[PIARC TC1.5] Yukio Adachi, Chair of TC 1.5, Japan	On-site	15min	Climate Resilient Drainage Design Re-evaluating P103 Failures Using Climate Adjusted Rainfall Models	[PMA Consulting] Siyabonga Bhengu (RSA)
15min	Official Opening from South Africa (National Department of Transport)	Minister Barbara Creecy (TBC), Director-General Leonard Malapane	On-site	25min	Q&A and debate	[PMA Consulting] Siyabonga Bhengu (RSA)
<b>9:45-11:15</b>	<b>SESSION 1 - COPING WITH EXTREME WEATHER</b>	<b>MODERATOR: (PIARC TC1.5) TOSHIYUKI YAMADA (JPN)</b>		3min	Conclusions by Session Chair	
2min	Introduction by Session Chair					
15min	Building Climate-Resilient Municipal Road Infrastructure: Local Government's Role in Disaster Preparedness, Response, and Recovery	South African Local Government Association] ThixoUnathi Mntonintshi (RSA)	On-site	<b>16:15-17:30</b>	<b>PANEL DISCUSSION 1: FUNDING MODELS FOR RECOVERY FROM DISASTER</b>	<b>MODERATOR: [SANRAL/PIARC TC1.5] KWANELE SIMELANE (RSA)</b>
15min	Road Closure Criteria: The Case of Portugal	[PIARC TC1.5] Pedro Silva (POR)	On-line	2min	Introduction by Session Chair	
15min	Coping with Clear Ice Hazards on Expressways	[PIARC TC1.5] Jongwook Jo (KOR)	On-line	15min	Responding to Extreme Weather Impact on Road Transport and Infrastructure: Beyond Climate Change	[Resilience Global] Dr Andries Jordaan (RSA)
15min	Slope Management Response Strategies to Exceptional Weather Events on South African Road Infrastructure	[SANRAL] Andrew Ssekayita (RSA)	On-site	15min	Rebuilding Lifelines: U.S. Strategies for Transportation Recovery Funding	[PIARC TC1.5] Chris Engelbrecht (USA)
15min	Early Warning Systems: A South African Perspective	[South African Weather Services] Tokelo Chiloane (RSA)	On-site	15min	How Can Disaster-Damaged Highways be Restored Quickly and Reliably?	[PIARC TC1.5] Yukio Adachi (JPN)
10min	Q&A and debate			15min	Municipal Infrastructure (Roads) Disaster Recovery Funding	[South African Local Government Association] ThixoUnathi Mntonintshi (RSA)
3min	Conclusions by Session Chair			3min	Conclusions by Session Chair	
<b>11:15-11:45</b>	<b>BREAK</b>			<b>17:30</b>	<b>END OF DAY 1</b>	
<b>11:45-13:15</b>	<b>SESSION 2 - ORGANISING SPECIFIC EXTREME WEATHER RESPONSE</b>	<b>MODERATOR: [SANRAL] TSHIMANGADZO MASINDI (RSA)</b>				
2min	Introduction by Session Chair					
15min	Co-Designing Smart, Resilient & Inclusive Mobility Through a Participatory Framework for Disaster-Responsive Transport Planning in Urban Areas of the Global South	[University of KwaZulu-Natal] Professor Dilip Das (RSA)	On-site			
15min	British Columbia Provincial Emergency Exercise Program: Role of the Transportation Authority	[PIARC TC1.5] Mike Pearson (CAN)	On-line			
15min	Strategy and Practical Use of Temporary Bridges and Retaining Structures during FLOOD 2024	[PIARC TC1.5] Jan Gruber (CZE)	On-line			
15min	Organisation Specific (SANRAL) Strategic Framework on Climate Change/Extreme Weather	[SANRAL] Dumisani Nkabinde (RSA)	On-site			
15min	Flood Defense Solutions	[Arcelor Mittal] Gugulethu Mthembu (RSA)	On-site			
10min	Q&A and debate					
3min	Conclusions by Session Chair					
<b>13:15-14:15</b>	<b>LUNCH BREAK</b>					

# Social & Networking



# Day 2



DAY 2	TITLE	SPEAKER (OR CHAIR)	ON-SITE/ON-LINE	13:30-15:00	SESSION 6 - SOCIAL RESILIENCE	MODERATOR: [SANRAL] SALOME NAICKER (RSA)
8:30-9:00	Registration			2min	Introduction by Session Chair	
9:00-10:30	<b>SESSION 4 - HOW ROAD INFRASTRUCTURE CAN IMPROVE RESILIENCE OF THE COUNTRY</b>	<b>MODERATOR: [PIARC TC1.5] MASAKI TSUBOUCHI (JPN)</b>		15min	Examining Road Disaster Risk and Inequality in South Africa	[RHDHV-Atana] Karen King (RSA) On-site
	2min	Introduction by Session Chair		15min	Towards Diversity and Inclusion in Road Disaster Management: Insights from the Osaka Workshop	[PIARC TC1.5] Saki Yostui (JPN) and Heather Griffin (UK) On-line
	15min	Reinforcing Resilience: Adaptive Road Infrastructure for a Climate-Stressed KwaZulu-Natal and South Africa	[University of KwaZulu-Natal] Mohamed Mostafa (RSA) On-site	15min	Case Studies Shows the Importance of Social Resilience in Disaster Management	[PIARC TC1.5] Tomo Fujita (JPN) On-site
	15min	Improving resilience by adapting to Climate Change in Victoria, Australia	[PIARC STC] Caroline Evans (AUS) On-line	15min	Promoting Sustainable and Resilient Bridge Infrastructure Through Early Warning Instrumentation and Advanced Assessment and Repair Strategies	[Naidu Consulting] Thobekile Ngcobo & Abish Gopal (RSA) On-site
	15min	Interagency Cooperation for Disaster	[PIARC TC1.5] Ryuma Nishikubi (I) (JPN) On-site	25min	Q&A and debate	
	15min	Quantifying Carbon Emissions in Road Infrastructure: Objectives, Insights, and Reporting Frameworks for Sustainable Development	[Naidu Consulting] Tarlia Gerald (RSA) On-site	3min	Conclusions by Session Chair	
	15min	Exploration and Integration of New Technologies in Building Resilience: Road Transport Disaster Management	National Depart of Transport] Solly Chuene (RSA) On-site	15:00-15:30	<b>BREAK</b>	
	10min	Q&A and debate		15:30-17:15	<b>PANEL DISCUSSION 2 - HOW TO MANAGE DIFFERENT CLIMATES AND GEOGRAPHY WITHIN THE SAME COUNTRY</b>	<b>MODERATOR: [SANRAL/PIARC TC1.5] NOMSA MODISE (RSA)</b>
	3min	Conclusions by Session Chair		2min	Introduction by Session Chair	
10:30-11:00	<b>Break</b>			10min	Meteorologist Perspective: Weather Systems RSA Context	[National Research Foundation] Dr Mary-Jane Bopape (RSA) On-line
11:00-12:30	<b>SESSION 5 - INFRASTRUCTURE RESILIENCE SUPPORTING SUPPLY CHAIN</b>	<b>MODERATOR: [SANRAL] JUSTICE CHAUKE (RSA)</b>		10min	Interagency Coordination for Managing Disparate Geographies in the USA	[PIARC TC1.5] Amanda Anderson [USA] On-line
	2min	Introduction by Session Chair		10min	Chilean Road Administration During Emergencies	[PIARC TC1.5] Marcelo Medina (CHL) On-line
	15min	Integrated Climate Action in Infrastructure: Aligning Policy, Mitigation and Adaptation for a Just Transition	[Naidu Consulting] Mahendren Manicum (RSA) On-site	10min	South African Road Transport Disaster Management Context	[National Depart of Transport] Solly Chuene (RSA) On-site
	15min	Highways Emergency Management Transformed Through Rapid Impact Assessment	[PIARC TC1.5] John Lamb (UK) On-line	10min	Climate Resilient Transport Solutions: Insights from Seven-Year Research into High Volume Transport Across Africa and South Asia	[Tanzania Road Agency] Joseph Haule (TZN) On-site
	15min	Expressway Proactive Closure Management in Cooperation with Various Stakeholders in Forecast of Heavy Snowfall	[PIARC TC1.5] Sota Tomobe (JPN) On-site	45min	Q&A and debate	
	15min	Planning the Resilience of Road Networks Climate Change and Other Hazards: A Perspective for African Countries	[Full Circle Partners] Danai Magugumela (RSA) On-site	3min	Conclusions by Session Chair	
	25min	Q&A and debate		17:15-17:30	Closing Session Technical Conclusions	[PIARC TC1.5] Yukio Adachi, Chair of TC 1.5, Japan On-site
	3min	Conclusions by Session Chair			<b>CLOSING REMARKS</b>	
12:30-13:30	<b>LUNCH BREAK</b>					

# Day 3 – PIARC TC



# Credits



## ORGANISING COMMITTEE

**Yukio Adachi**  
Chair TCI.5 Disaster Management

**Marcelo Medina Santibanez**  
TCI.5 Spanish Speaking Secretary

**Christopher Engelbrecht**  
TCI.5 English Speaking Secretary

**Alain Lefebvre**  
TCI.5 French Speaking Secretary

**Kwanele Simelane**  
Seminar Secretariat  
RSA Representative

**Tshidi Ramabya**  
South African Road Federation

## ADVISORY COMMITTEE

**Reginald Demana**  
South African First Delegate

**Randall Cable**  
PIARC Executive Committee Member

**Patrick Mallejacq**  
PIARC General Secretary

**Miguel Caso**  
**Florez**  
PIARC Technical Director